UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/669,680	09/26/2000	William Scott Spangler	ARC9-2000-0079US1	4795

28211 7590 03/25/2004

FREDERICK W. GIBB, III
MCGINN & GIBB, PLLC
2568-A RIVA ROAD
SUITE 304
ANNAPOLIS, MD 21401

EXAMINER	
SCHLAIFER, JONATHAN D	
ART UNIT	**PAPER NUMBER**
2178	6

DATE MAILED: 03/25/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/669,680	SPANGLER, WILLIAM SCOTT	
	Examiner	Art Unit	
	Jonathan D. Schlaifer	2178	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *26 September 2000*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-30* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-30* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *17 January 2002* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date 2.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

1. This action is responsive to application 09/669,680 filed on 09/26/2000, with prior art filed on 09/26/2000.

2. Claims 1-30 are pending in the case. Claims 1, 8, 15, 20, 23, and 30 are independent claims.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. **Claims 1-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lantrip et al. (USPN 6,298,174 B1—filing date 10/15/1999), hereinafter Lantrip, further in view of Ruocco et al. (USPN 5,864,855—filing date 2/26/1996), hereinafter Ruocco.**

4. **Regarding independent claim 1,** Lantrip discloses a method of clustering documents in datasets (in col. 2, lines 39-42, document vectors are arranged into clusters) comprising: clustering first documents and a first dataset to produce first document classes; (in col. 2, lines 39-42, document vectors are arranged into clusters), and creating centroid seeds based on said first document classes (in col. 2, lines 43-45, the invention finds centroids). However, Lantrip fails to disclose clustering second documents in a second dataset using said centroid seeds. However, in col. 14, lines 10-45 of Ruocco, Ruocco discloses in the claim processing in parallel second datasets based on cluster information from previous cluster vectors (see col. 14, lines 28-30) in order to gain the benefit of information from

previous clusters to improve analysis of subsequent datasets. It would have been obvious to one of ordinary skill in the art at the time of the invention to use the information contained in the centroid seeds from Lantrip for subsequent datasets as in Ruocco in order to improve analysis of subsequent datasets.

5. **Regarding dependent claim 2,** Lantrip and Ruocco fail to disclose that said first dataset and said second dataset are related. However, it was notoriously well known in the art at the time of the invention that if one intends to process a dataset based on the results of previously processing another dataset, the datasets should be related in order for the results to be meaningful. It would have been obvious to one of ordinary skill in the art at the time of the invention to have the first and second dataset be related in order for the results to be meaningful.

6. **Regarding dependent claim 3,** Lantrip discloses that the clustering of said first documents in said first dataset comprises: forming a first dictionary of most common words in said first dataset (in col. 2, lines 30-40, Lantrip creates a database based on the dataset, which would include the common words); generating a first vector space model by counting, for each word in said first dictionary, a number of said first documents in which said word occurs (in col. 2, lines 35-42, Lantrip creates a vector space model); and clustering said first documents in said first dataset based on said first vector space model (in col. 2, lines 39-42, Lantrip carries out clustering).

7. **Regarding dependent claim 4,** Lantrip fails to disclose a method further comprising generating a second vector space model by counting, for each word in said first dictionary, a number of said second document in which said word occurs. However,

Ruocco, in col. 14, lines 20-35, discloses generating such a vector space model for multiple document sets in order to aid in the clustering analysis of the document sets. It would have been obvious to one of ordinary skill in the art at the time of the invention to generate a second vector space model in the manner of Ruocco in Lantrip's invention in order to aid in the clustering analysis of the document sets.

8. **Regarding dependent claim 5,** Lantrip discloses that said creating of said centroid seeds comprises: classifying said second vector space model using said first document classes to produce a classified second vector space model (col. 2, lines 39-42, the vector space model is clustered); and determining a mean of vectors in each class in said classified second vector space model, wherein said mean comprises said centroid seeds (col. 2, lines 43-45, the centroid is the center of mass of the clusters).

9. **Regarding dependent claim 6,** Lantrip and Ruocco fail to disclose a method further comprising forming a second dictionary of most common words in said second dataset; generating a third vector space model by counting, for each word in said second dictionary, a number of said second documents in which said word occurs; and clustering said documents in said second dataset based on said third vector space model to produce a second dataset cluster. However, this constitutes simply extending and repeating claim 3 to a third dataset, and it was notoriously well known in the art at the time of the invention that it is useful to repeat steps for multiple datasets to take advantage of their utility for subsequent data. It would have been obvious to one of ordinary skill in the art at the time of the invention to extend the steps of claim 3 to a subsequent dataset to gain the benefits of the analysis for that dataset.

10. **Regarding dependent claim 7,** Lantrip discloses in col. 2, lines 39-45 that clustering of said documents in said dataset using said centroid seeds produces an adapted dataset cluster. However, Lantrip fails to disclose the use of multiple datasets and that the method further comprises comparing classes in said adapted dataset cluster to classes in said second dataset cluster; and adding classes to said adapted dataset cluster based on said comparing. However, in col. 4, lines 61-67, Rocco deals with comparing multiple dataset clusters in order to obtain more information about the relative status of the datasets. It would have been obvious to one of ordinary skill in the art at the time of the invention to compare multiple dataset clusters in order to obtain more information about the relative status of the datasets.
11. **Regarding independent claim 8,** it is a system that carries out the method of claim 1, and is rejected under similar rationale.
12. **Regarding dependent claim 9,** it is a system that carries out the method of claim 2, and is rejected under similar rationale.
13. **Regarding dependent claim 10,** it is a system that carries out the method of claim 3, and is rejected under similar rationale.
14. **Regarding dependent claim 11,** it is a system that carries out the method of claim 4, and is rejected under similar rationale.
15. **Regarding dependent claim 12,** it is a system that carries out the method of claim 5, and is rejected under similar rationale.
16. **Regarding dependent claim 13,** it is a system that carries out the method of claim 6, and is rejected under similar rationale.

17. **Regarding dependent claim 14,** it is a system that carries out the method of claim 7, and is rejected under similar rationale.

18. **Regarding independent claim 15,** it is essentially analogous to claim 1 except that it involves the steps of generating a vector space model of said second documents, which Ruocco presents in col. 14, lines 27-36, and classifying said vector space model of said second documents using said first document classes to produce a classified vector space model, which Ruocco presents in col. 14, lines 27-36. It would have been obvious to one of ordinary skill in the art at the time of the invention to use the Ruocco form of vector space analyis in addition to the Lantrip material from the rejection of Claim 1 in order to enhance the classifications of the two datasets. The result would produce an invention that would serve to reject claim 15.

19. **Regarding dependent claim 16,** it is a method that modifies claim 15 in the same manner that claim 3 modifies claim 1 and is rejected under similar rationale.

20. **Regarding dependent claim 17,** it is a method that modifies claim 15 in the same manner that claim 4 modifies claim 1 and is rejected under similar rationale.

21. **Regarding dependent claim 18,** it is a method that modifies claim 15 in the same manner that claim 6 modifies claim 1 and is rejected under similar rationale.

22. **Regarding dependent claim 19,** it is a method that modifies claim 15 in the same manner that claim 7 modifies claim 1 and is rejected under similar rationale.

23. **Regarding independent claim 20,** Lantrip discloses a method of clustering documents comprising: forming a first dictionary of most common words in a first dataset (col. 2, lines 30-35, Lantrip forms a first dictionary of common words); generating a first vector

space model by counting, for each word in said first dictionary, a number of said first documents in which said words occurs (col. 2, lines 35-40, Lantrip forms vectors); clustering said first documents in said first dataset based on said first vector space model to produce first document classes (col. 2, lines 39-42, Lantrip forms clusters), and determining a mena of vectors in each class in said classified second vector space model to produce centroid seeds; (col. 2, lines 43-45, Lantrip forms centroid seeds) and clustering documents in a second datasets using said centroid seeds (col. 2, lines 45-57, Lantrip clusters using centroids). Lantrip fails to disclose generating a second vector space model by counting, for each word in said first dictionary, and number of said second documents in which said word occurs and classifying said second documents in said second vector space model using said first document classes to produce a classified second vector space model. However, col. 14, lines 28-36 of Ruocco indicate that vector clustering analysis may involve multiple datasets in order to gain the benefit of information analysis from multiple sources. It would have been obvious to one of ordinary skill in the art at the time of the invention to have vector clustering analysis involve multiple datasets in order to gain the benefit of information analysis from multiple sources.

24. **Regarding dependent claim 21,** it is a method that modifies claim 20 in the same manner that claim 6 modifies claim 1 and is rejected under similar rationale.

25. **Regarding dependent claim 22,** it is a method that modifies claim 20 in the same manner that claim 7 modifies claim 1 and is rejected under similar rationale.

26. **Regarding independent claim 23,** it is a program device embodying instruction to perform a method that is equivalent to Claim 1 and is rejected under similar rationale.

27. **Regarding dependent claim 24,** it is a program device embodying instruction to perform a method that is equivalent to Claim 2 and is rejected under similar rationale.

28. **Regarding dependent claim 25,** it is a program device embodying instruction to perform a method that is equivalent to Claim 3 and is rejected under similar rationale.

29. **Regarding dependent claim 26,** it is a program device embodying instruction to perform a method that is equivalent to Claim 4 and is rejected under similar rationale.

30. **Regarding dependent claim 27,** it is a program device embodying instruction to perform a method that is equivalent to Claim 5 and is rejected under similar rationale.

31. **Regarding dependent claim 28,** it is a program device embodying instruction to perform a method that is equivalent to Claim 6 and is rejected under similar rationale.

32. **Regarding dependent claim 29,** it is a program device embodying instruction to perform a method that is equivalent to Claim 7 and is rejected under similar rationale.

33. **Regarding dependent claim 30,** it is a program device embodying instruction to perform a system that is equivalent to Claim 8 and is rejected under similar rationale.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

USPN 5,317,507 (filing date 11/7/1990)—Gallant

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jonathan D. Schlaifer whose telephone number is 703-305-9777. The examiner can normally be reached on 8:30-5:00, M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Heather Herndon can be reached on 703-308-5186. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

JS

STEPHEN S. HONG
PRIMARY EXAMINER